REMARKS

Favorable reconsideration is requested in view of the above amendments and following remarks. Applicant appreciates the courtesy shown by the Examiner in discussing this case with Applicant's representative on November 10, 2008. The discussions of the interview are reflected in the following remarks.

Claim 1 has been amended. The amendments to claim 1 are supported by the original disclosure, for example on page 6, lines 20-24. No new matter has been added. Claims 1-5 and 7-14 remain pending in the application.

Claims 1-3, 7-9 and 11-14 are rejected under 35 USC 102(b) as being anticipated by Harada et al. (US 5,057,220). Applicant respectfully traverses the rejection.

Claim 1 is directed to a method for producing methane gas from organic wastes. Claim 1 requires treating organic wastes with at least one of supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances, separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the water phase to methane fermentation. Advantageously, the steps required by claim 1 allow methane fermentation to be carried out in a short time with high digestion efficiency (see page 6, lines 11-15 of the specification).

Harada '220 is directed to a process for treating waste water by wet oxidation. The reference teaches two treatments before anaerobic digestion, namely step (I)(i) where the waste water is subjected to liquid phase oxidation in the absence of a catalyst and in the presence of an oxygen-containing gas, and step (I)(ii), where the waste water treated in step (I)(i) is subjected to liquid phase oxidation in the presence of an oxygen-containing gas and a catalyst, the catalyst being used to generate the low molecular weight substances (col. 2, lines 21-35). The reference teaches that where the waste water treated in step (I)(ii) is likely to decrease efficiency in treatment, the waste water treated in step (I)(ii) can be separated into clear water and concentrated liquid, where the clear water is removed for other uses such as industrial water, and the concentrated liquid is mixed with the starting waste water (col. 5, lines 34-45). The reference further teaches combustible ash can be separated from the waste water treated in step (I)(ii) before the anaerobic digestion step (col. 5, lines 45-48). However, nothing in Harada '220 teaches or suggests using at least one of supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances, separating the treated substances into an

oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the water phase to methane fermentation. Accordingly, claim 1 and the dependent claims therefrom are patentable over Harada '220.

Claims 1-5, 7-8, 12 and 13 are rejected under 35 USC 103(a) as being unpatentable over Matsuzawa et al. (JP 2002-066507) in view of Harada '220. Applicant respectfully traverses this rejection.

Matsuzawa is directed to a method for treating organic solids. The reference discloses treating organic solids within the treating device 1 to slurry the organic solids insoluble in water (see paragraph [0010]). The slurried organic solids are then introduced into a solubilizing treatment device 3 where the slurried organic solids are subjected to a hydrothermal treatment under high temperature and pressure conditions (see paragraph [0011]). The solubilized substance is then introduced into an anaerobic treating vessel 4.

The reference discloses that the anaerobic treating vessel 4 contains sludge having anaerobic microorganisms, so that when the solubilized substance is added to the anaerobic treating vessel 4, the organic material within the solubilized substance is subjected to methane fermentation (see paragraph [0015]). The reference further discloses that the methane gas generated then is recuperated as clean energy (that is, methane gas without chlorides), whereas the effluent after the anaerobic processing is discharged in a state including the sludge to a solid-liquid separation device 7 (see paragraph [0022]). The effluent then is subjected to solid-liquid separation within the solid-liquid separation device 7 (see paragraph [0023]).

It can be clearly understood from the above description that the solid-liquid separation occurs after the methane fermentation, and thus what is being subjected to solid-liquid separation is the liquid waste derived from the methane fermentation, as opposed to the solubilized substance derived from the hydrothermal treatment within the solubilizing treatment device 3.

On the other hand, claim 1 requires treating organic wastes with at least one of supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances, separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the water phase to methane fermentation.

As such, claim 1 requires separating a treated substance obtained by a treatment with at least one of supercritical water and sub-critical water into an oil phase, a water phase and a solid

phase, as opposed to subjecting a treated substance obtained after methane fermentation to solid-liquid separation, and then subjecting the collected water phase to methane fermentation. Nothing in the reference teaches or even suggests the steps required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over Matsuzawa.

The rejection relies on Harada '220 for separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede fermentation. Applicants respectfully submit that the rejection is relying on the improper use of hindsight in the interpretation of Harada '220. In particular, Harada '220 teaches that where the waste water treated in step (I)(ii) is likely to decrease efficiency in treatment, the waste water treated in step (I)(ii) can be separated by reverse osmosis into clear water and concentrated liquid, where the clear water is removed for other uses such as industrial water, and the concentrated liquid is mixed with the starting waste water. Nothing in Harada '220 teaches or suggests separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the collected water phase to methane fermentation as required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references taken alone or together.

Claims 1-3, 4-5, 7-8 and 12-13 are rejected under 35 USC 103(a) as being unpatentable over Yamashita et al. (JP 2002-102897) in view of Harada '220. Applicant respectfully traverses this rejection.

Yamashita is directed to a method for treating organic food wastes insoluble in water. The treatment method includes subjecting organic waste such as waste yeast to a hydrothermal reaction treatment within a hydrothermal reaction treatment apparatus 2 to liquefy the organic waste. The liquefied hydrothermal reaction treated matter is then introduced into an anaerobic treatment apparatus 3, where the contents are subjected to methane fermentation (see paragraph [0014]). Yamashita further teaches that the treated material after the anaerobic treatment is subjected to solid-liquid separation where necessary. Thereafter, the liquid part is introduced into the discharge processor 4 (see paragraph [0015]).

It can be clearly understood from the above description that in the method disclosed by Yamashita, the solid-liquid separation occurs after the methane fermentation, and thus what is being subjected to solid-liquid separation is the treated material derived from the methane

fermentation, as opposed to the liquefied hydrothermal reaction treated matter derived from the hydrothermal treatment within the hydrothermal reaction treatment apparatus 2.

On the other hand, claim 1 requires treating organic wastes with at least one of supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances, separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the collected water phase to methane fermentation.

As such, claim 1 requires separating a treated substance obtained by a treatment with at least one of supercritical water and sub-critical water into an oil phase, a water phase and a solid phase, as opposed to subjecting a treated substance obtained after methane fermentation to solid-liquid separation, and then subjecting the collected water phase to methane fermentation. Nothing in the reference teaches or even suggests the steps required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over Yamashita.

The rejection relies on Harada '220 for separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede fermentation. Applicants respectfully submit that the rejection is relying on the improper use of hindsight in the interpretation of Harada '220. In particular, Harada '220 teaches that where the waste water treated in step (I)(ii) is likely to decrease efficiency in treatment, the waste water treated in step (I)(ii) can be separated by reverse osmosis into clear water and concentrated liquid, where the clear water is removed for other uses such as industrial water, and the concentrated liquid is mixed with the starting waste water. Nothing in Harada '220 teaches or suggests separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the water phase to methane fermentation as required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references taken alone or together.

Claims 1-3, 5, 7-8 and 11-14 are rejected under 35 USC 103(a) as being unpatentable over Harada et al. ("Catalytic Wet Oxidation Process for Wastewater Treatment") in view of Harada '220. Applicant respectfully traverses this rejection.

Harada is directed to a wastewater treatment including the use of a solid catalyst. The reference discloses treating wastewater under high pressure and temperature (see pages 2-3). The reference further discloses that the contaminants within the wastewater can be partially

treated by a catalytic wet oxidation process and then processed by an anaerobic treatment method (see page 5). In particular, the reference teaches subjecting the substance obtained after the catalytic wet oxidation process to solid-liquid separation (see page 6 and Figure 7). The separation step involves attempting the solubilization of the sludge decomposition and the low molecularization of the recalcitrant organic material, separating only those substances below a fixed molecular weight using a separating membrane, and then subjecting the separated substance to methane fermentation (see page 6).

However, nothing in the reference teaches or suggests using supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances, separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the collected water phase to methane fermentation as required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over Harada.

The rejection relies on Harada '220 for separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede fermentation. Applicants respectfully submit that the rejection is relying on the improper use of hindsight in the interpretation of Harada '220. In particular, Harada '220 teaches that where the waste water treated in step (I)(ii) is likely to decrease efficiency in treatment, the waste water treated in step (I)(ii) can be separated by reverse osmosis into clear water and concentrated liquid, where the clear water is removed for other uses such as industrial water, and the concentrated liquid is mixed with the starting waste water. Nothing in Harada '220 teaches or suggests separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the water phase to methane fermentation as required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references taken alone or together.

Claims 1-3, 5, 7-8 and 11-14 are rejected under 35 USC 103(a) as being unpatentable Inoue et al. ("Developing Wastewater Recycling Technologies by Catalytic Wet Oxidation Process") in view of Harada '220. Applicant respectfully traverses this rejection.

Inoue teaches combining a catalytic wet oxidation process with an anaerobic process. In particular, the reference teaches subjecting sludge to a catalytic wet oxidation process, attempting the solubilization of the sludge decomposition and the low molecularization of the recalcitrant organic material so as to convert the sludge to easily decomposable organic material,

separating the easily decomposable organic material using a separation membrane, conducting methane fermentation, and then collecting the methane gas (see page 3).

However, nothing in the reference likewise teaches or suggests using supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances, separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the collected water phase to methane fermentation as required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over Inoue.

The rejection relies on Harada '220 for separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede fermentation. Applicants respectfully submit that the rejection is relying on the improper use of hindsight in the interpretation of Harada '220. In particular, Harada '220 teaches that where the waste water treated in step (I)(ii) is likely to decrease efficiency in treatment, the waste water treated in step (I)(ii) can be separated by reverse osmosis into clear water and concentrated liquid, where the clear water is removed for other uses such as industrial water, and the concentrated liquid is mixed with the starting waste water. Nothing in Harada '220 teaches or suggests separating the treated substances into an oil phase, a water phase, and a solid phase, so that the water phase is collected, and subjecting the water phase to methane fermentation as required by claim 1. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references taken alone or together.

Claim 10 is rejected under 35 USC 103(a) as being unpatentable over any one of Matsuzawa et al., Yamashita et al., Harada et al. and Inoue et al. in view of Harada '220. Applicant respectfully traverses the rejection.

Claim 1 has been distinguished above. Claim 10 depends from claim 1, and is patentable over the references for at least the reasons discussed above. Applicants do not concede the correctness of the rejection.

In view of the above, favorable reconsideration in the form of a notice of allowance is respectfully requested. Any questions regarding this communication can be directed to the undersigned attorney, Douglas P. Mueller, Reg. No. 30,300, at (612) 455-3804.

Respectfully submitted,

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